KIPS

MDCAT Notes 2017

BIOLOGY

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FB Group:

MCAT 2017

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MCAT Notes and Papers

A Message From KOMAL YAQOOB

I dedicate my these notes to My Great mother whose prayers made me able to do such a toughest task.But Alas! Now she is not in this world to see her daughter's success, to see Her dream' s coming to reality. Please pray for her that May Allah Almighty increase her ranks in Jannah-tul-firdous and Lighten up Her grave with HIS Divine light. Also remember me in your prayersˋ ˋ

Ameen

Jazak Allah

UNIT 1

Date: 26-May-17 (1) **Day:** Friday

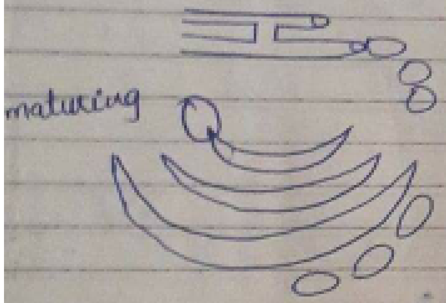
Biology

Unit: 1

M.C.Q's: 10

Topic:

Endoplasmic Reticulm



- Transport
- Mechanical support

RER	SER
• Proteins	• Detoxificatio
	• lipid metabol
	• Nerve impuls

Concave shape: mature

Convex shape: Forming

Topic:

Golgi Apparatus

Membranes of G.A stacked just

(2)

like plates.
- smaller size → maturing
- which part is directed towards plasma membrane? → maturing.

• M.C.Q

④ It is absent in?

a) Liver cells
b) Higher Plants
✓c) Blue green Algae
d) Yeast
e) None

• Function:

→ Formation of conjugated molecules
→ export damaging materials outside.
→ Hydrogen Peroxide → hydroxide.
→ Jis kism ka product ho ga waisy e product

• M.C.Q

④ Major Function?

a)✓ secretion
b) regulation of cell metabolism
c) Active transport
d) transpiration

Role For Proteins:

- Proteins are processed in G.A
- Proteins are formed in RER

→ wo protein jis nay secrete hona hota hai wo RER. kay lumen mein hoti hai wha say pack ho ker G.A, Phir Pack ho ker exocytosis say cell say bahir

→ jo protein cell nay use kerni hoti hai wo cytosol mein ribosomes jo float ker rhy hoty hein un kay pas hoti hai

More Concentration:

jha zyada secretion hoti hai waha e golgi vesicles zyada hoty hein.

M.C.Q

① Function of Golgi Apparatus to make?
a) Carbohydrate into lipid
b) Lipid into protein
c) Carbohydrate into protein
d) ✓ both a & c

Topic:

'Lysosome'

(single membrane bounded)

M.C.Q:

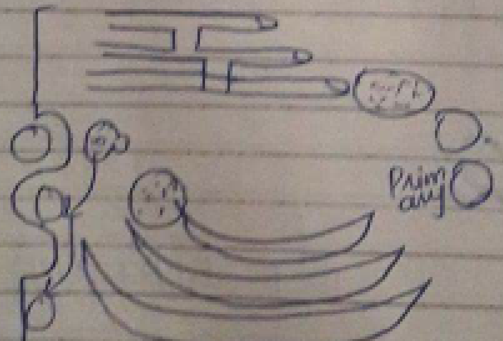
- connected with intracellular dig
- Absent in plant
- Present in Animals

④ When lysosome fused with food vacule?
a) Primary lysosome
b) ✓ Secondary lysosome
c) Food vacule
d) TransPortary lysosome

- contain many enzymes
- Glycogenesis type II: → disorder in which glyc donot convert into glucose

Tay sachs: → lipids accumulates in brain cell & cause mental retardation

Diagram:



Importance OF Fungi

Gain

Ecological Importance

- Decomposer
  - ↓ Recycling of nutrients
- Symbiont Relation
  - Lichen ↓
    - Bioindicater
    - Reindeer Moss
    - Natural Dye
    - Biological
    - Succession
  - Mycorrhiza ↓
    - 95%
    - Improve growth of plant
- Bioremediation

Commercial Importance:

Food:
200 sp
Mushrooms
Morals
Truffles → 125 Red Patch

Poisionous Mushroom:
Jack -O- Latern (Aminata)

Industry:

Yeast:
Bread + liquer

Penicillum:
Flavour, aroma, characteristic colour chees

Aspergillus:
Soya sauce, soya paste

Medicine:

Penicillin:

Lovastatin:
↓ cholestrol

Cyclosporine:
organ transplant rejection

Ergotin:
Migrain

Griesofulvin:
Inhibit fungal growth

Research Yeast:
Pink bread mold →
neurospora

Losses:

Plant:

M.C.Q:

- It is fungal disease in cotton?

a) ergut
[✓ b) root rot]
c) scab
d) red rot (sugar-cane)

- Powdery mild-dews is not disease of?

a) Wheat
b) grapes
c) rose
[✓ d) Cotton]

- Smut-disease is due to?

[✓ a) Asperigellus]
b) Ustillago tritici
c) Yeast
d) none

- Which is a superficial fungal infection?

→ Ring worm → Imperfect fungi

Which disease is due to soil contaminated with bird's feces

→ histoplasmosis

Brain → Order → body do not response
conversion → [illegible]

- Toxin produced by fungi?

a) Phycotoxin
b) Myotoxin
[✓ c) Mycotoxin]
d) Aflatoxin

CONTROL OF Bacteria

⊙ Physical
↓
Sterlization

- Steam
- Dry heat
- Moist heat → coagulation of Protein
- Gas
- Radiation → 300m → gamma rays
- Filtration

⊙ Chemical

- Disinfectant
- Antiseptic
- Antibiotic

M.CQ's

- Shape of polio virus spherical
- Herpes simplex caused by Herpex simplex type 1 CDNA virus
- Most common hepatitis is B
- Cocci belongs to Bacilli
- Cancer causing fungus Aflat
- % in gram +ve of lipids H
- Thickness of gram -ve cell wall 8-11nm
- Yeast belong to Ascomycota
- Citric acid obtained from Aspergillu
- Anti fungal drug Griseofulvin
- Respiration spirochetes belongs to
- Diameter of mycoplasma
- Diameter of streptomycin 0.75 – 1.25 um
- 3 structure in all bacteria cellmemb, c ribosome
- 3 characteristic of virus B
  ↓
  DNA virus → serum, vaccine available → genetically

UNIT 4

In syllabus **ANIMILIA** (2 M.C.Q)
↑
only examples of '5' Phylums (imp characters extra)

⇒ Radiata:

→ Diploblastic

→ radial symmetry
→ ectoderm
→ endoderm
→ cylauderates

⇒ Bilateria:

Presence/absence of body cavity → coelom

→ Triploblastic
→ bilateral symmetry
→ ectoderm
→ endoderm
→ mesoderm

- Acelomate:

  Absent; Ex: Platyhalmenthesis

- Pseuodocelomate:

  Present; Ex: Round worms
  But line with mesoderm

- Celomate:

  having cavity line with mesoderm
  Ex:
  - Annelids
  - melluscus

- Hemichordates
- chordates
- echinoderms
- Arthropods

NOTE:

Porifera is not involved in the because have no symmetery

(1) PLATYHALMENTHES:

Imp because have parasites

Liver Fluke	Tenia (Solium)
Presents in bile	segmented
ducts, it block	ripened segm
bile ducts & effects	called parag
liver	Infestation → in
Specific names:	Disinfestation →
Fasciola Hepatica	

2) NEMATODES: (Round worms)

→ Enterobius vermicularis (small thread pinworm) → large intestine → [illegible]
(anus & itching)

→ Ancylostoma duodenale (Hook worm) → [illegible]
[illegible] most common → anticoagulant → small intestine

→ Ascaris lumbricoides → large, small intestine
[illegible] same time blocks intestine

3) Arthropods:

~~Arachnids~~ Disease carriers → [illegible]
carry disease they themselves not effect by disease

- edible in many countries
- Garden Snail & slugs are pest
- Industrial products, medicine → obtained by countries
- Host in many disease

4) Mellusca:

(Snails)

5) Amelids:

Leech (Hirudo medicionalis)

• Interior head is not prominent • Natural habitate is Pond • Attach with host body & sucks blood • anticoagland (heparin) → smooth flow of blood

PARAZOA	EUMATAZOA
Non-symmetry	Proper symmetery
No germinal layer	germinal layer
Simplest of all animals	
sponges	

RADIAL SYMMETRY
↓
Diploblastic
↓
Plane divided animal in two halves
↓
cinidarions

BILATERAL
↓
Triploblastic
↓
1 Plane mid line divide animal in two halves (equal)
↓
Ecto: (make skin)
Endo: (digestive system & assosiate glands
Meso= [illegible]

UHS: Unit # 4 (77)

Kingdom Animilia

Liver Fluke:

Most complex organism in animal → feces → rain → Snail → time period (reproduction) → water → attain grasses → sheep → Blood → liver

Sheep, Human Snail: Primary secondary

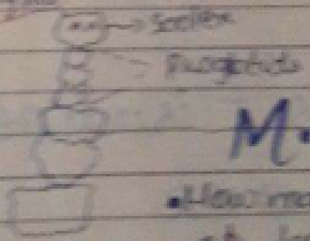
M.C.Q:

- Liver fluke living in bile duct feeds on?

a) Bile
b) epithelial cell of bile duct
c) Blood and lymph
✓d) All

Tape Worm:

Cattle, Pig → Secondary host
Man → Primary host



M.C.Q:

Proglottids present in?

) Male sex organ
b) Female sex organ
c) both 'a' and 'b'
d) All

M.C.Q:

- How many kinds of hooks in tape worm?

a) 3
✓b) 6
c) 9
d) 12

Pg # 180 (78)

Ascaris lumbericoide:

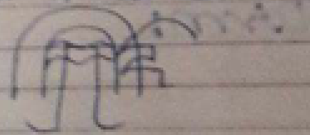
- Numerous in number.
- 20 cm long
- Present in children
- It is an intestinal parasite of man

Enterobius Vermicularis:

On night female lay egg and cause iching

Ancylostoma:

Present in small Intestine.



Class Hirudinea:

Pg # 182

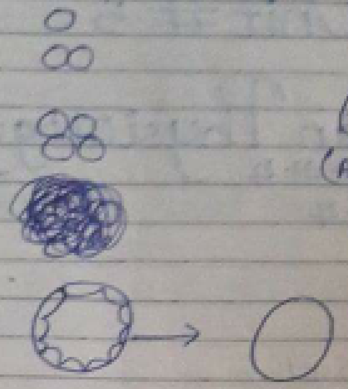
M.C.Q:

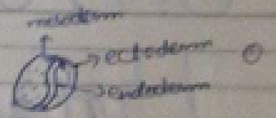
- Which is actoparasite?

a) mosquito → Malaria ✓b) Lice c) Tse-Tse → sleeping sickness d) Comm fly → Cholera + Hep

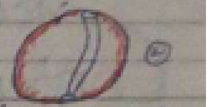
(79)

Same Imp Information:

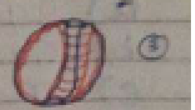



mesoderm
ectoderm
endoderm
①

(A Coelomate)

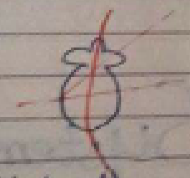


(pseudocoelom

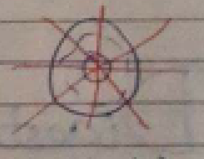


(coelomate)

Body cavity:	① ×	False	true ③
Digestive system:	Sacclike eg Hydra	Tube	Tube



(Bilateral)



(Radiata)

UNIT 5

UHS Unit # 5

Human Physiology

kips unit # 4
MCQ : 04

Content:

a) Digestive System
b) Gas exchange
c) Transportation
d) Homeostasis
e) Nervous System
f) Reproduction
g) Support and movement
h) Hormonal control
i) Immunity

(A) Digestive System

M.C.Q:

rocess of digest Conversion of food from?
a) inorganic - organic
b) insoluble - soluble
[✓ c) Indiffusable - diffuseable]
d) All

M.C.Q:

✓ Elementry canal extends from?
a) mouth to anus
b) mouth to rectum
c) oral cavity to rectum
d) oral cavity

Q: Mouth & oral cavity:

mouth Opening b/w
Ans: two lips ↑ and rest portion to pharynx
called oral cavity.

M.C.Q:

The shape of human mouth is?

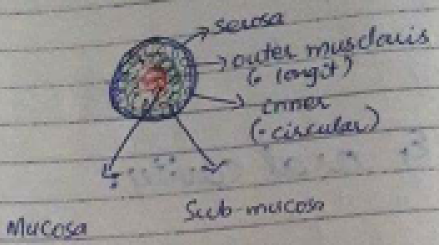
✓a) Slit like
b) oval
c) spherical
d) cubic

Components:

It has two components

Alimentary canal	ii) Gland
• O.C	Salivary gland
• Esophagus	Liver → enzyme Ex
• Stomach	Pancreas ↓
S.I	
L.I	chemical digestion of fat
Rectum	

Alimentary:



Oral Cavity:

Selection of food
- Sight
- Smell
- taste (most imp source of selection of food)

Mechanical digestion
- Grinding (teeth)
  - Insicors
  - canyons
  - P.M
  - Molars
- Mixing (muscles)
  - Tongue
  - Cheeks

NOTE:
Sight & smell is not the part of the oral cavity. It is the part of the Brain

M.C.Q:

Tongue muscles are?

a) Smooth
b) ✓ Skeleton (Hyoid Bone)
c) cardiac
d) Epithelial

(B3)

Chemical digestion & lubricant:

Salivary Gland

Types

Sub-lingual	Sub-max	Parotid
Blow tongue	Behind Jaw	In front of Ant. Ear
Secrete mucus "mucin"	Mucus+ Amylase	Amylase

Secretions:

Sliva

H_2O + mucus	sodium bicarbonate	Amylase
	↓ 8-6 pH	starch → Dextrin → Maltose

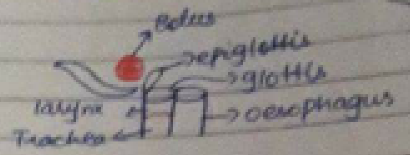
NOTE:

30% starch digest in oral cavity

- process not happen in oral cavity?
  a) Digestion
  b) absorbtion
  ✓ c) Peristalsis
  d) Selection

(B4)

Process OF Swallowing:



Swallowing:

Volunty
↓
- Tongue up/backward

Involunty
↓
- soft Palate
- epiglotis
- larynx
- circular muscle of glottis

- **Soft Palate:** upward, close nasal cavity
- **Epiglotis:**
  - Horizontal
- **Larynx:** upward
- **Circular muscle glottis:** contract

Peristalsis:

Reverse
Anti Peristalsis
Nausea
Vomiting

Forward
Stimulation
Touch of bolus
N.S

Stomach

→ widest part of alimentary canal. 10 inch

Location
Abdominal cavity
left side of body

Layers
Outer
connective tissue
Middle
(smooth muscle)
outer (longi)
oblique muscle
inner (circular)
inner
musoca
Gastric gland → Release [illegible]
Pyloric end

Parts
cardiac end
Pyloric end

M.C.Q:
Main function of stomach?
→ Storage

Gut hormone B.II

Intrinsic factor → absorb of vit B_{12}

Mucus cells
mucus
- Protect stomach wall
- Forces
- Amphoteric

Parietal OR Oxyntic cells
HCl
2-3 PH
(1.8-3.57PH)

Zymogen cells
Pepsinogen
(inactive)
↓
Pepsinogen

(active)
Pepsin
optimum PH = 2
Protein → Peptones → Polypeptide

Small Intestine

Vitamin nucleic acid → no digestion in duodenum
smallest part

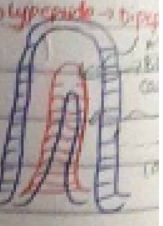
(20-25cm)
Duodenum
(Digestion of lipid)
Secretin
inhibit Gastrin
Stimulat.
Pancreas
Liver
Acidic food

(2.4m) 2/5
Jejunum

3/5
Ileum (3

- Amino Peptidase → Polypeptide → Dip
- Erypsin → Di — A.A
- Lipase Fat → F.A + Gly
- Maltase → Maltose → G+G
- Lactase → lactose → G+

glucose



Liver is very Imp.

↓

Pancreatic
Juice

- Amylase • Starch – Maltose
- Sodium bicarbonate • PH, neutralize chyme
- Lipase • Fat → F.A + Gly
- Trypsinogen

↓ Enterokinase

Trypsin

emulsification of fat ← Bile [salt / pigment
↓
[illegible] ← Gall Bladder
↓
Bile duct
↓
Duodenum

Chile & Chyme:

When juices added in chyme then it is called chile.

Butter fat absorb in blood while other are absorb in lacteal

Large Intenstine

Caecum — Colon — Rectum

Colon: ascending, Transverse, descending

M.C.Q:

- Which of the following is dual gland of gut?

a) Stomach
b) deudonum
c) Pancreas
d) all of these
✓e) Both 'a' & 'b'

- Precursor of trypsin secreted by?

a) Stomach
b) Intestine
c) ✓ Pacreas
d) Liver

6
↑
Elementry
↑
- How many sphincter present in digestive?

a) 4
b) 5
✓c) 6
✓d) 7

	Pharynx	Larynx	Trachea	Bronchi	Bronchioles	Alveolar Ducts	Alveolar Sac	Alveoli
Cartilage	✗	✓	✓	✓	✗	✗	✗	✗
Mucus cells	✓	✓	✓	✓	✗	✗	✗	✗
Cilia	✗	✗	✓	✓	✓	✗	✗	✗
Smooth muscles	✓	✓	✓	✓	✓	✗	✗	✗
Gases	✗	✗	✗	✗	✗	✓	✓	✓
Collagen	✓	✓	✓	✓	✓	✓	✓	✓

UHS Unit # 5b
Kips Unit # 4
Chp # 13
M.C.q : 04

Functions

Respiratory System:

- Gaseous Exchange
- H_2O Base Bronchi
- Filteration of air, Moist, warm
- Voice production
- Defence (mucus)
- Thermoregulation (Regulation in dog → Panting)
- Gaseous Transportation (Function of circulatory system)

Respiratory Exchange

External

Air→lungs
↓
Environment

internal

Air → Alveoli(Blo
Blood → tissue

Parts:.

Nostrils (Hair + mucous membrane
3 passage)
↓
Nasal cavity
↓
Pharynx
↓
larynx
↓ 10-12cm
Trachea
↓
Bronchi
↓
Bronchioles
↓
Air sac
↓
Alveoli

M.C.Q:

- Channelization of air?.
  → Pharynx
- Common passage way of respiration and digestion?
  → Pharynx
- Not part of respiratory system?
  → Smell
- Play imp role in warm filtration?
  → Nasal cavity

Ventral most structure of neck is?
→ Trachea
Dorsal ?
→ vertebral colum
both b/w is → oesophagus.

Air Sac:

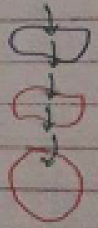
→ foetus 7 month → surfactant develope
↑
Glycoprotein
↑
→ surface tend → surface tension of water → low

M.C.Q:

How many time molecule O_2 diffuse from cell membrane haemo?
a) 3
b) 4
✓ **c)** 5
d) 2

NOTE:

700 million alveoli in lungs.



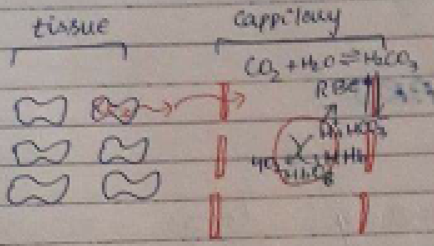
Breathing

- Control
  - Involuntry
    - Medulla
    - Pons
  - Voluntry
    - Cerebium
- Mechanism
  - Inspiration
  - expiration

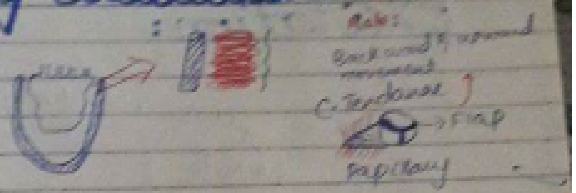
	Inspiration	expiration
Common name	Inhilation	Exhalation
Mechanism	Passive exp. of lung	Passive cont of lung
Diaphram	Contract (less dome shape)	Relax
Intercostal muscle	contract	Relax.
Rib cage	upward/ Forward/ outward	Inward/ back/ Down
Volume of thorax	increase	decrease
Pressure on lungs	Decrease	Increase
Air move	inward	outward

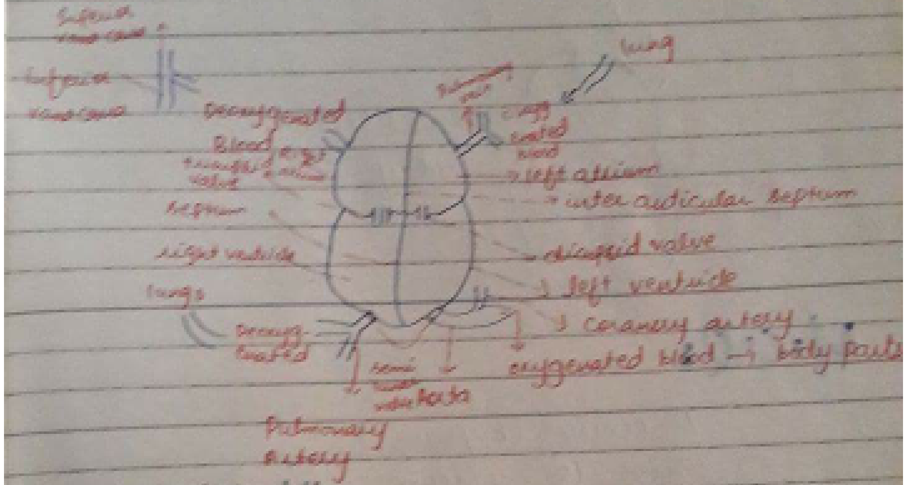
Transport OF CO_2:

Plasma	Carbohemo-globin	Bicarbonate	K⁺carb
5%	20%	75%	5%
Dissolve	(amino dissolve part)		


tissue
capillary
$CO_2 + H_2O \rightleftharpoons H_2CO_3$
RBC
$H^+ + HCO_3^-$

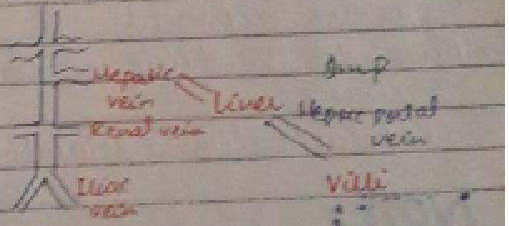
Chamber & Circulation:


Role:
Backward & forward movement
C. tendinae
flap
papillary


Superior vena cava
Inferior vena cava
Deoxygenated Blood
tricuspid valve
Septum
right ventricle
lungs
Deoxygenated
Semi lunar valve
Aorta
Pulmonary artery
Pulmonary vein
lung
oxygenated blood
→ left atrium
→ inter auricular septum
→ bicuspid valve
→ left ventricle
→ coronary artery
oxygenated blood → body parts

Pulmonary circulation

Heart → lung


Hepatic vein
Liver
Imp
Hepatic portal vein
Renal vein
Iliac vein
Villi

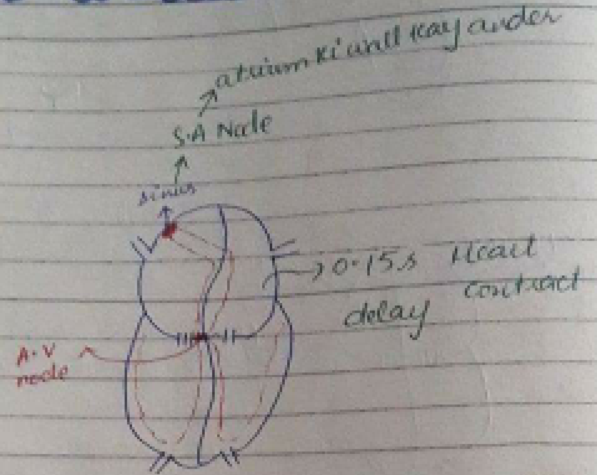
Body → heart

Systematic circulation

M.C.Q: Most thicker wall present

→ left ventricle

Excitation:


atrium ki wall kay ander
S.A Node
sinus
0·15 s Heart contract delay
A.V node

M·C·Q:

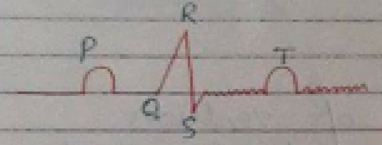
P-wave represent?
→ Prior to atrium contraction
S-wave represent?
→ Prior to ventricular contraction
T-wave?
→ Repolarization (relaxation)

NOTE:

Heart is a self repairing.

72-75 Time/per mint
$\frac{60}{75} = 0{\cdot}8$ sec
atrium contraction = 0·1 s
atrium relaxation = 0·7 s

Ventricular contraction = 0·3 s
Ventricular relaxation = 0·5 s



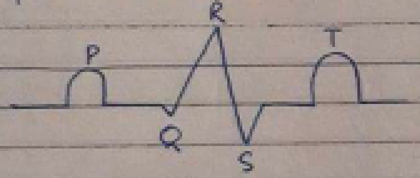
In Gyton Physiology

away From chamber of heart → Artery

0·4 sec → Rest
0·4 sec → work

ECG

5 waves (P, Q, R, S, T)
Complex waves (QRS)



Appearance:

P-wave:

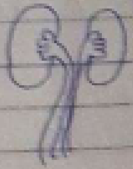
- Before depolarization of atria.
- After atrial contraction
- Rise of atrial pressure

- **QRS complex:**

- Before ventricular contraction
- After depolarization of ventricles
- Rise of ventricular pressure

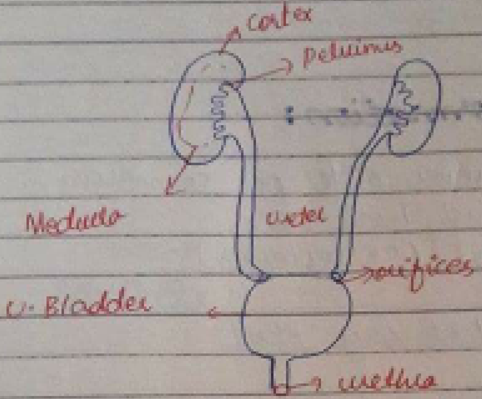
T-wave:

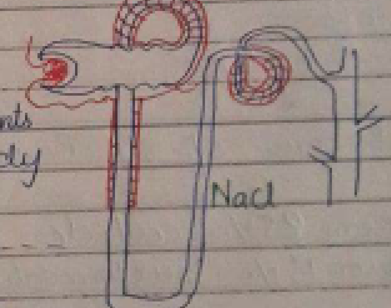
Repolarization of ventricles
Relaxation of ventricular muscles
At end of ventricular systole.



UHS Unit # 5

"Homeostasis"


cortex
Pelvimus
Medulla
ureter
orifices
U. Bladder
urethra



- Removal of N_2 waste
- Regulation of H_2O contents of water (fluid) → body
- —— PH ———
- —— chemical composition ——
- Renin → B.P↑
- erythropotein → RBC → formation

All —o

M.C.Q:

- In human primary structure for elimination of urea?

a) kidney
b) liver
c) skin
d) ✓ Both 'a' & 'b'

General Information:

→ Dorsal wall ki inner side per connective tissue say juri hoti hai
→ lumbar region (5- vertebrae)
— $\boxed{1,2}$
→ Thoracic kay last say start

M.C.Q:

- Most re-absorption in kidney take place?

→ cortex
↓
Because of its Bowmann capsule.

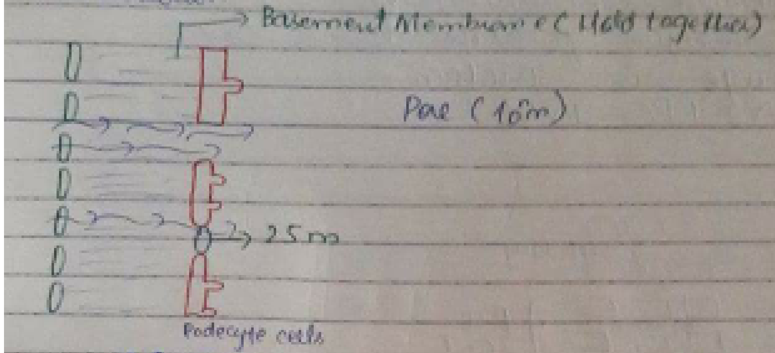
Nephron 85% carticle
Nephron 15% juxtamedullary

- lungs → cappilary blood — oxy
  other tissue cappilary — deoxy

- kidney → afferent + efferent.

Urine Formation

Filteration



M.C.Q:

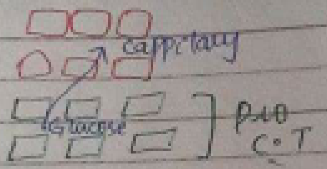
Which is not required for reabsorbsion?
→ filteration

Composition:

→ Glumerulus filterate
↓
useful → glucose Aminoacid
Nitrogenous waste + Salt hormones
urea ——→ vitamens
+ (Ions)
uricacid waste large

② Reabsorption:

- Which is not involved in re-absorption
  → Bowmann's capsule
- Glumerulus ki wall say guzarny k bad filteration finish → B.M
- Glumerulus filterate do not contain
- large size protein
- No RBC, WBC


capillary
Glucose
Pro
C.T

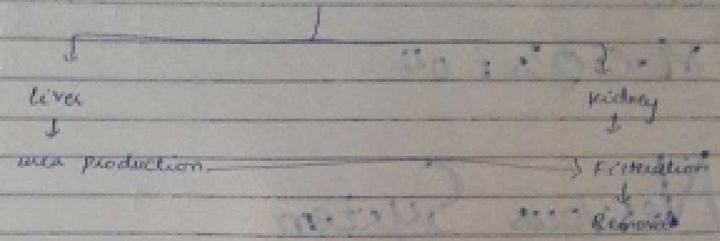
- 65- 80% → absorb in Pro. C.T
- 80% → H_2O → absorb in Pro. C.T

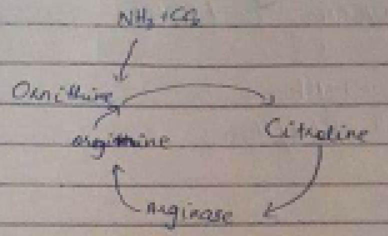
Loop of Henle:

→ Assending limb

Excretion:

liver & kidney is involve in excretion

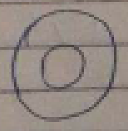

liver
urea production
kidney
Filtration
Removal


$NH_3 + CO_2$
Ornithine
Citroline
arginine
arginase

How many urea involve 2

Pg# 7 Examples

Receptor Control center Effectors



- Ecto
- Endo
- Hetero → H

UNIT 6

UHS Unit # 5(e)
Kips Unit # 6
Chp # 17
M.C.Q's: 04

Nervous System

- Common behaviour activities generally called?

x a) Circadian Rhythem
✓ b) Biological Rhythem
c) Diurnal
d) Circunal

Study of this rhythem → chronobiology

- Rhythem may be the result of?

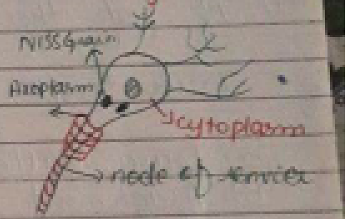
a) Exogenous
b) Endogenous
c) Synchronization of a & b
✓ d) All

- Supraciasmatic (SCN) → biological clock in human brain
- Pennial gland → malonin → sleep

Nervous Co-ordination

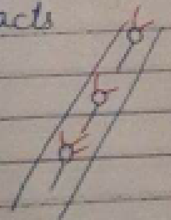
Receptors | Neurons | Effectors ↓ not in syllabus

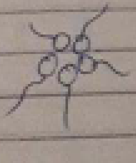
Neurons:
- Types
  - ensory
  - Associative
  - Motor (1m) long axon
- Structure
  - Dendrite
  - Cell Body
  - Axon



PNS:
Nerve

CNS:
Tracts





- w of toward → cellbody
- away → Axon
- Part which can not be regenerat → cell bodies
- Regenerate → Axon & dendrites

CNS → Nuclei
PNS → Ganglia

(107)

- Nucleus is not present in Axoplasmic → Mitochondria
- Newecell do not divide because they not have

a) Nucleus
b) cytoplasm
c) Mitochondria
[✓ d)] centrosome
e) Golgi Apparatus

- A statment true about vagus nerve?

a) It is nerve of sympthatic System
b) It is a spinal nerve
[✓ c)] It stimulation slow down heart beat
d) All of these

- Outer tough membrane attach to brain?

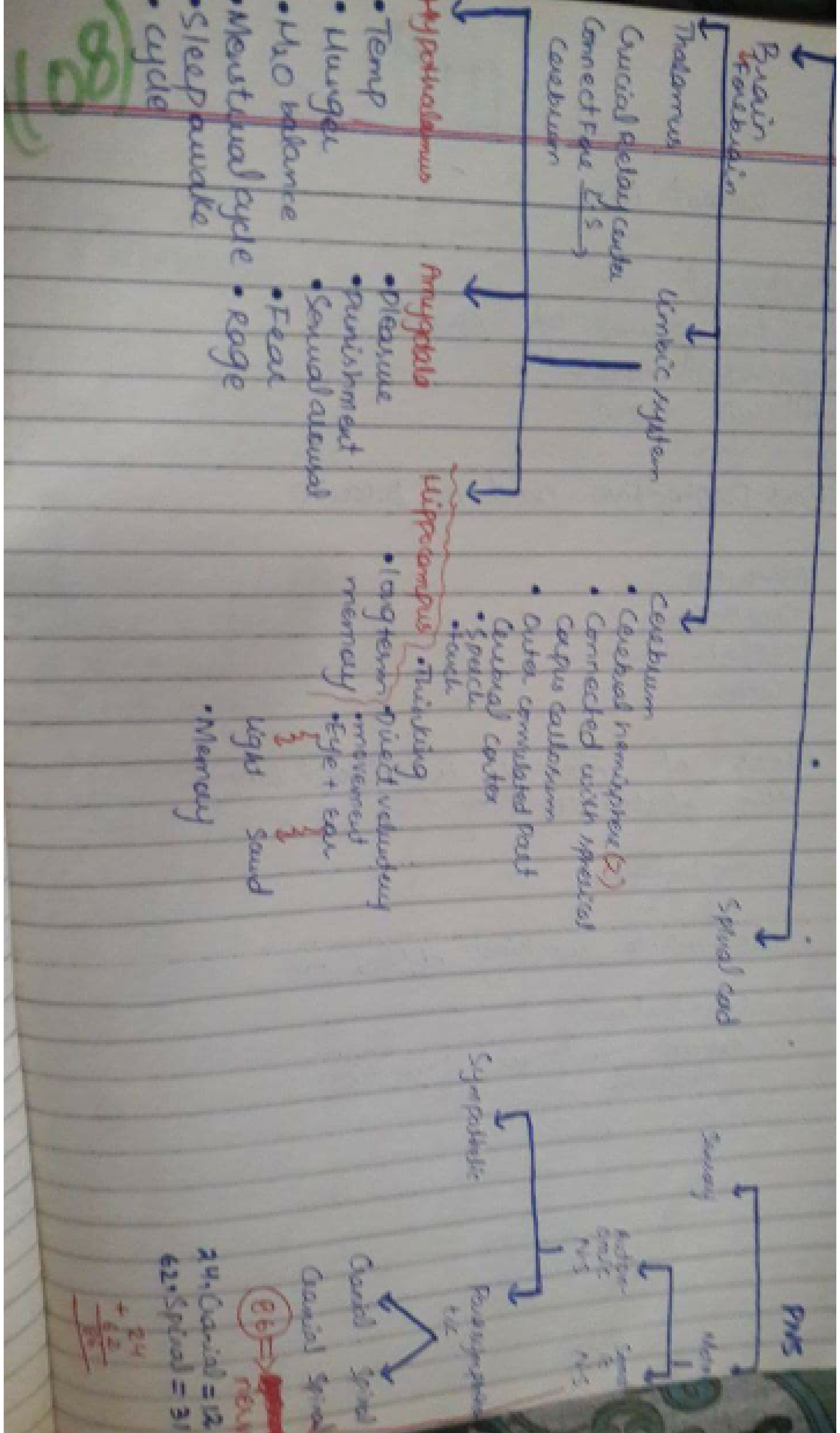
a) Dura Matter (tough membrane)
b) Arachnoid
c) Arachnoid space (CSF + blood vessels)
d) PIA Meter.

which is not the part of CSF?

a) Salt
b) harmone
c) lymphocyte
d) waste
[✓ e)] None

---

(108)



- Brain
  - Forebrain
    - Thalamus
      - Crucial Relay center
      - Connect Fore $\xrightarrow{CS}$ Cerebrum
    - Limbic system
      - Hypothalamus
        - Temp
        - Hunger
        - H_2O balance
        - Menstrual cycle
        - Sleep awake
        - cycle
      - Amygdala
        - Pleasure
        - punishment
        - Sexual arousal
        - Fear
        - Rage
      - Hippocampus
        - long term memory
    - Cerebrum
      - Cerebral hemisphere (2)
      - Connected with special corpus callosum
      - Outer convoluted part Cerebral center
        - Speech
        - touch
        - Thinking
        - Direct voluntary movement
        - Eye + ear

          light   sound
        - Memory
- Spinal cord
- PNS
  - Sensory
  - Moto
    - Autonomic NS
      - Sympathetic
      - Parasympathe tic
        - Cranial
        - Spinal
    - Soma ic NS

Cranial Spinal

(86) ⇒ neu

24 • Cranial = 12
62 • Spinal = 31

24
+ 62
86

CFS present in?

a) Ventrical
b) In Central canal of spinal cord
c) meningial space
d) All of these

- Best protective part of brain?

a Medulla
b Cerebelum
c Cellebulum
d Cons

- Loss of memory is caused by the destruction of?

Cere~~bullum~~erum

- Part whose waking effect on

Cerebulum

- Several automic function
Medulla

NOT DIRECT MENTION IN Syllabus

Planaria	Hydra
Ganglia present in head region	• No such differenciatio
Diff of Nerves ⇒ Sensory ⇒ Associative ⇒ Motor	• No such diff
Sense organ ⇒ Eye + Chemoreceptor	• Absent
Touch receptor	• Absent

MID BRAIN OF MAN:

- Relay centre
- connect fore + hind

HIND BRAIN:

Medulla	Pons	Cerebulla
Breathing Heart rate Blood pressure Swallowing	Transition state b/w sleep & awakeness control pattern & rate of breathing	

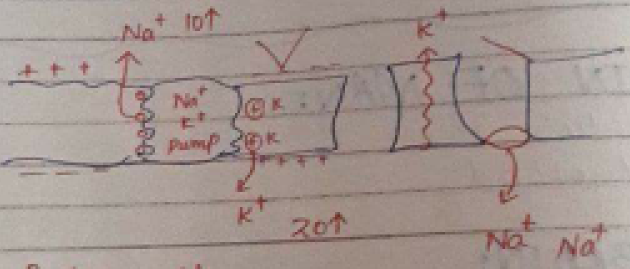
M.C.Q:

- −70mv is measure in?

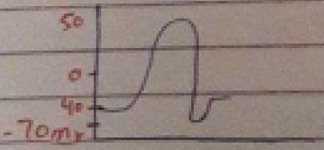
✓a) Inbetween
b) Iner side
c) outer side
d) none

- Potassium is —— greater than outside?

a) 10 (sodium)
✓b) 20
c) 30
d) 40



Protein (−) Cl (−)



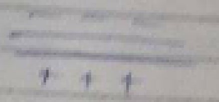
40 → just sodium penetrate aur jab attain ho jata hai then gate open

In Depolarization which ion play role?
→ Sodium

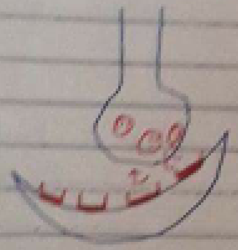
In Repolarization which ion play role?
→ Potassium (K)

Millions of pump are present
If Na+ K+ ion pump operate then −90mV

Refractory phase?



SYNAPSE



Process through which release of neurotransmitter?
→ Exocytes

neuron message
↓
Impulse
↓
neurotransmitter
↓
Mitochondria
↓
Energy
↓
G.A → Is mein pack kia jata hai

neurotransmitter cannot enter in next membrane
After attachment → detach ho jaayien
tow wo enzyme present in synaptic
cleft degenerate → reaptic.

SPINAL CORD

Which contain axons of sensory neuron?

✓a Dorsal Root
b Ventral Root (motor neuron)
c Grey matter
d white matter (myelinated neuron)

Which disease is convulsive?
→ Epilepsy

Alcohol aggregates?
→ Epilepsy

UHS UNIT # 5(f)

REPRODUCTION

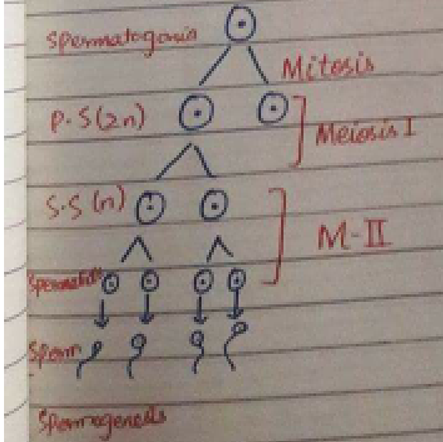
MALE REPRODUCTIVE SYSTEM:

Primary sex organ
↑
Copulatory organ   Testis

Scrotum
- 35°C sperm formation

Seminefrous tubules
- Germinal Epithelial
  - (6-layers)
- Sertoli cells
  - Provide protection
  - Liquid medium
  - Nourishment
  - Lysosome, mitocho
    Golgi Apparatus et

Intersitial cells/ Leydig cells
↓
- Testosteron


Spermatogonia
Mitosis
P.S(2n)
Meiosis I
S.S (n)
M-II
Spermatids
Sperm
Spermogenesis

⇒ Duct
↓
- Seminefrous tubules
↓
- Vasa effrentia
↓
- Epididymis → 6m long
↓
- Vas deference
↓
- Ejaculatory duct
↓
- urethra

⇒ **GLANDS:**

- **Seminal vesicles:**
  - Semen formation = 70%
  - H_2O
  - Mucus
  - Alkaline fluid
  - Frotose
  - citrate

- **Prostate gland:**
  - Semen formation = 30%
  - Mucous
  - Alkaline fluid

M.C.Q

- Common duct formed by union of vas deference & duct from seminal vesicle?

Urethra
Vasa
✓ Ejaculatory duct

- Hormone that control the function of base-ment membrane / sertoli cell / seminefrous / sperm formation?

✓ FSH
ACTH
Progestrone

- How many sperm are formed from a secondary?

1
✓ 2
4
8

Spermatogenisis involves

Mitosis
Meiosis
✓ Both 'a' & 'b'
Metamorphosis
All

FEMALE REPRODUCTIVE SYSTEM:

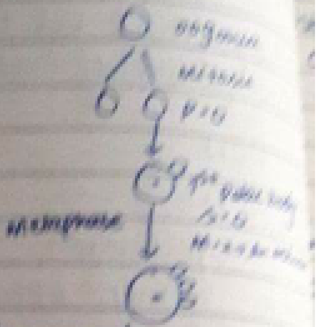
→ lower abdominal part [illegible]

Ovaries (3-5cm long)

Outer

inner

Fallopian tube
(12 cm long)


oogonium
meiosis
1st polar body
menopause

UTERUS:

It have 3 layers:
- Perimetrium
- Myometrium
- Endometrium

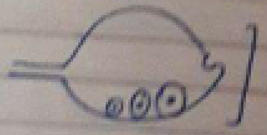
470 → egg → use → others degenerate

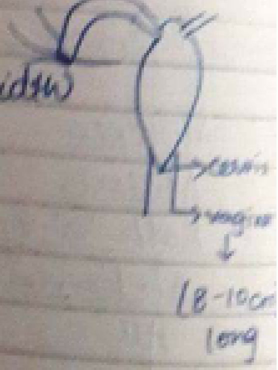
2 million egg present in females → before birth

NOTE:

Egg release into coelomic cavity

ovary:


1-3cm (width)
3-5 cm(long)

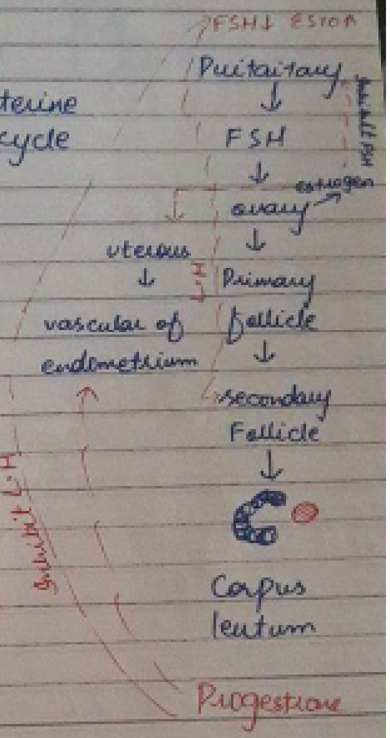

cervix
vagina
(8-10cm long

MENSTRUAL CYCLE:

Ovarian cycle

uterine cycle

- First menstrual cycle = Menarch
- complete end of menstraul cycle = menopause.

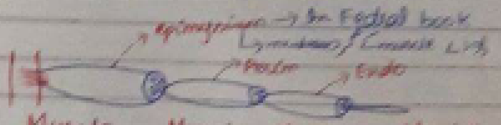

FSH↓ ESTOR
Puitairary
FSH
estrogen
ovary
uterous
vascular of endometrium
L.H
Primary follicle
secondary Follicle
Carpus leutum
Inhibit L.H
Progestrone

UHS UNIT # 5(g)

SUPPORT AND MOVEMENT

MCQ's 5

⇒ SKELETAL MUSCLES:

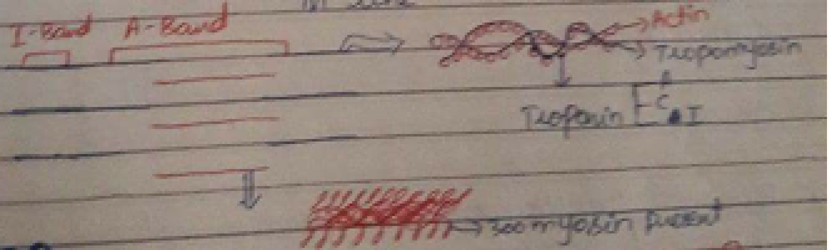

Epimysium → In Football back
Ligaments / Connective L.T.
Perim
Endo

Muscle — Muscle Bundle or Fascicle ((Cell but multinucleated) 1-100 μm) — Muscle Fibers — Myofibril (1-2 μm)

↓

Sarcomere

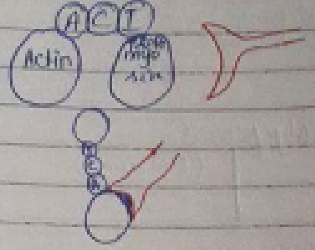
Thick/ dark (A-Band)	Thin/ Light (I-Band)
• Anisotropic • Mid section H-zone • Bisected by M-line	• Isotropic • Bisected by Z-line

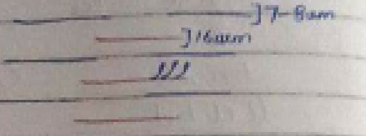

I-Band
A-Band
Actin
Tropomyosin
Tropoin T C I
300 myosin present

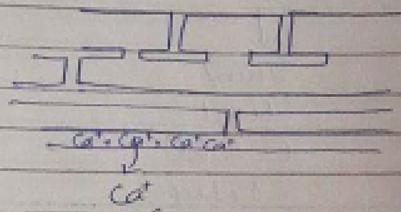
MCQ:

- A- band consist of?
  → Myosin & actin
- I- band consist of?
  → actin

- Sarcomere extend from?
  → Between the Z-Z line
  → ATP not involved in muscle contraction
  because when Ca goes inner side
  → 6 filament surround a myosin


A C T
Actin
Tropo myo Actin




Ca Ca Ca Ca
Ca

جب Band بنا رہے ہوں Myosin actin کو آگے کی طرف move
کرواتا اور ہم کہتے ہیں کہ muscle contract ہو گیا ہے

Aerobic	Anerobic
Glycogen ↓ Glucose	

- From 5 lactic acid 2 glucose molecule formed

Which is fatigue slowly?

a) Smooth → hormones for contraction
b) Cardiac → Brached
c) Skeletal → contract & fatigue → increase
d) All ↳ voluntry,

- Each muscle contain many nuclei → smooth
- Each cardiac muscle contain only one nucleus

- More variable in function than other muscle type → smooth muscle.

- Most ancient type of muscle → smoot
- Which is caused by the deficiency of ATP?

→ Muscle Fatigue

- Camp → water kam
- Hard exercise → average say 60% increase.
- In one minute bridges form & reform 50 to 100

- Muscle contract size → 30 to 60 reduce.

A Quick Review to MDCAT

Notes Prepared by **Komal Yaqoob**

Will be helpful for all those preparing for MDCAT

Special thanx to Komal Yaqoob for these Notes Like our page and join our Group for more MDCAT related stuff

Remember Us in ur precious prayers.

Jazak Allah

Regards

Noor Mobin